United States District Court,
E.D. Texas, Marshall Division.

RAYTHEON COMPANY Plaintif,
RAYTHEON COMPANY Plaintiff.
v.
MCDATA CORPORATION, Overland Storage, Inc, Qualstar Corporation, Qlogic Corporation, Ricoh Corporation, Spectra Logic Corporation,
and Veritas Software Corporation Defendants.

No. 2:03-CV-013(TJW)

Feb. 10, 2004.

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MEMORANDUM OPINION AND ORDER ON CLAIM CONSTRUCTION

WARD**, J.**

The Court has thoroughly examined the patent-in-suit and the intrinsic record, conducted a claim construction hearing, and considered the relevant authorities cited by the parties. The Court has considered the disputed terms in the light of the intrinsic record and issues this claim construction opinion:

I. INTRODUCTION

This is a patent infringement lawsuit involving a mass data storage system. The sole patent-in-suit is U.S. Patent No. 5,412,791 ("the '791 Patent"), entitled "Mass Data Storage Library," issued on May 2, 1995 to assignee E-Systems, Inc. Plaintiff Raytheon Company ("Raytheon") subsequently acquired the '791 Patent. In this lawsuit, Raytheon is suing Overland Storage, Inc. ("Overland"), Qualstar Corp. ("Qualstar"), QLogic

Corporation ("QLogic"), Ricoh Corporation ("Ricoh"), Spectra Logic Corporation ("Spectra Logic"), and Veritas Software Corporation ("Veritas") (collectively, "Defendants") for infringement of Claims 5, 12, 14, and 23 of the '791 Patent. FN1

FN1. Specifically, Raytheon claims that the '791 Patent has been infringed by 1) QLogic by making, using, selling, importing, and offering to sell switches that are adapted for using in infringing mass data storage systems and advertising or otherwise promoting their use in infringing systems; 2) Ricoh by operating infringing mass data storage library system(s) at their data center(s); 3) Overland, Qualstar, and Spectra Logic by making, using, selling, importing, and offering to sell tape storage libraries that are adapted for using in infringing mass data storage systems and advertising or otherwise promoting their use in infringing systems; and 4) Veritas by making, using, selling, importing, and offering to sell software that is adapted for use in infringing mass data storage systems and advertising or otherwise promoting their use in infringing systems.

II. ASSERTED CLAIMS AND DISPUTED TERMS

The allegedly infringed claims and the disputed terms are as follows:

Claim 5-A data retrieval and recording system having a computer for interfacing with a recorder and a storage library to read data from and write data to a predetermined area of a selected storage medium, comprising

means for interfacing the computer to the recorder for simultaneous read and write operations; and

controller means coupled to said *means for interfacing* for receiving operational function commands from the computer and for configuring the *means for interfacing* simultaneous read and write operations, the *controller means* further coupled to the storage library for loading a selected storage medium in the recorder, and further coupled to the recorder for queuing the loaded storage medium to the predetermined area. (emphases added).

Claim 12-A mass data storage library system, comprising:

a plurality of data storage devices in a library each having areas for storing data;

means for identifying a designated storage device in the library for access and for identifying and selecting an area of the designated storage device on which data is to be read and written;

means for accessing the designated data storage device to read or write data in the selected area; and

file directory means for storing *file directory data* representing the identity of the designated storage device, the area of that device selected for the data and a code identifying the data stored on the accessed storage device at the selected area. (emphases added).

Claim 14-A system for providing any one of a plurality of host computers with access to stored data, comprising:

a mass storage data library comprising a plurality of individually accessible data storage devices;

a data directory archive for maintaining an address directory of the data stored on each data storage device;

a plurality of data record/playback modules, each of said modules reading data from and writing data to a selected data storage device;

interface means for *bi-directionally coupling* a host computer to one of the data record/playback modules; and

a controller computer coupled to the *interface means,* the data directory archive and the mass storage library for receiving data access requests and a directory address for the requested data and, in response thereto, generating a *first signal* causing a data storage device containing the requested data to be loaded into a *selected data record/playback module* and a *second signal* for configuring the *interface means* to couple the requested data to a requesting host computer. (emphases added).

Claim 23-A mass data storage and retrieval system comprising:

a plurality of means for information storage forming a mass storage library;

a *data directory* for maintaining a *directory of the information* stored in the mass storage library and generating, in response to a request, a data location output signal identifying the location within the mass storage library of information responsive to the request;

a plurality of data recorder modules for receiving and reading information from and writing information to a selected means for information storage;

interface means bi-directionally coupled to the data recorder modules for reading and writing of information from and to the selected means for information storage received by the data recorder module;

buffer means for storing information transmitted to the data recorder module as written to the means for information storage and storing information received from the data recorder module as read from the means for information storage; and

a control computer coupled to the *data directory* for receiving the data location output signal and, in response thereto, generating a *first command signal* output to the mass storage library for selecting and loading the selected means for information storage in a data recorder module and for generating a *second command signal* for coupling the *interface means* to the recorder module loaded with the selected means for information storage. (emphases added).

III. LAW GOVERNING CLAIM CONSTRUCTION

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed.Cir.1999). Claim construction is an issue of law for the court to decide. Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

Claim construction analysis begins with the words of the claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history" *Id*. There is a "heavy presumption" that terms used in the claims mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed.Cir.2002). Unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art. *Id*. The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources-the claims themselves, *see* Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed.Cir.1999); dictionaries and treatises, Texas Digital, 308 F.3d at 1202; and the written description, the drawings, and the prosecution history, *see, e.g.,* DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324 (Fed.Cir.2001).

"[C]laims must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979-980. "[O]ne purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed.Cir.2000) When a patentee acts as his own lexicographer, any uncommon meaning given to a word must be set forth in the specification. Intellicall, Inc. v. Phonometrics, 952 F.2d 1384, 1388 (Fed.Cir.1992). "Although the specification need not present every embodiment or permutation of the invention and the claims are not limited to the preferred embodiment of the invention, neither do the claims enlarge what is patented beyond what the inventor has described as the invention." Netword, LLC v.. Centraal Corporation, 242 F.3d 1347, 1352 (Fed.Cir.2001)

In *Texas Digital,* the Federal Circuit counseled that:

Consulting the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves, invites a violation of [Federal Circuit] precedent counseling against importing limitations into the claims.... For example, if an invention is disclosed in the written description in only one exemplary form or in only one embodiment, the risk of starting with the intrinsic record is that the single form or embodiment so disclosed will be read to require that the claim terms be limited to that single form or embodiment FN2 ... Indeed, one can easily be misled to believe that this is precisely what our precedent requires when it informs that disputed claim terms should be construed in light of the intrinsic record

FN2. *See* Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958, 966 (Fed.Cir.2000) ("[A]lthough the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments."); Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998) (cautioning against the limitation of the claimed invention to preferred or specific embodiments or examples); Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995) ("[A] patent claim is not necessarily limited to a preferred embodiment disclosed in the patent."); SRI Int'l, Inc. v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 n. 14 (Fed.Cir.1985) (en banc) ("That a specification describes only one embodiment does not require that each claim be limited to that one embodiment.").

But if the meaning of the words themselves would not have been understood to persons of skill in the art to be limited only to the examples or embodiments described in the specification, reading the words in such a

confined way would mandate the wrong result and would violate [the] proscription of not reading limitations from the specification into the claims.
Texas Digital, 308 F.3d at 1204-05.
The Federal Circuit also held in *Texas Digital* that courts may consult dictionaries, encyclopedias and treatises in determining the ordinary and customary meanings of claim terms *Id*. at 1202. The Federal Circuit found dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, to be objective and reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art.FN3 *Id*. at 1202-03. Where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning, the presumption in favor of a dictionary definition will be overcome. *Id*. at 1204. "[T]he presumption also will be rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope" *Id*.

FN3. The Federal Circuit also recognized, however, that "[b]ecause words often have multiple dictionary definitions, some having no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor" *Id*.

Dictionaries, encyclopedias and treatises are not "extrinsic evidence" or even a "special form of extrinsic evidence." *Id*. at 1203. "[E]xtrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language." Vitronics, 90 F.3d at 1584. Where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight. *Id*.

In this case, certain disputed terms are drafted in means-plus-function format. Claim terms drafted in means-plus-function format are governed by 35 U.S.C. s. 112, para. 6, which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof

35 U S C. s. 112, para. 6 (2000).

In determining whether a claim limitation is a means-plus-function limitation, "the use of the word 'means' creates a presumption that s. 112, para. 6 applies." Personalized Media v. Int'l Trade Comm'n, 161 F.3d 696, 703 (Fed.Cir.1998). However, a limitation that uses the word "means" but does not recite a function that corresponds to the means does not invoke s. 112, para. 6. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999). Likewise, even when a limitation does recite a function, if it also recites sufficiently definite structure for performing that function, then s. 112, para. 6 does not apply. *Id*.

The first step in construing such a limitation is to identify the function of the means-plus-function limitation. MicroChem., Inc. v.. Great Plains Chem. Co., 194 F.3d 1250, 1258 (Fed.Cir.1999). The next step is to identify the corresponding structure in the written description necessary to perform that function. *Id*. "Structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." B. Braun Medical, Inc.

v. Abbott Laboratories, 124 F.3d 1419, 1424 (Fed.Cir.1997). "The [means-plus-function] statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim." Micro Chem., 194 F.3d at 1258. A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures. *Id*. Identification of corresponding structure may embrace more than the preferred embodiment. *Id*.

IV. DISCUSSION

The parties' proposed claim constructions in this case illustrate the classic and quite predictable situation in which the plaintiff seeks to broaden the scope of the asserted claims while the defendants seek to limit the scope of the asserted claims In some instances, Raytheon asks the Court to ignore specific structures disclosed in the specification, resulting in overly vague constructions. In other instances, the Defendants' constructions are equally inappropriate-they ask the Court to import limitations into the claims and, in construing means-plus-function terms, to find corresponding structures within other corresponding structures. Whether the parties knowingly or inadvertently stray too far, this Court must rein in the parties' unbridled constructions and reinforce the claim construction boundaries established by the Federal Circuit. The court now turns to that task

1. "means for interfacing" (Claim 5) and "interface means" (Claims 14, 23)

The parties agree that "means for interfacing" and "interface means" are means-plus-function limitations and that each should have the same construction as the other. However, they disagree as to the proper construction. Both sides also disagree as to the claimed function and the corresponding structure.

The first step in construing a means-plus-function limitation is to identify the function of the limitation MicroChem, 194 F.3d at 1258. According to the dictionary, the term "interfacing" means connecting by means of an interface. Thus, the function of the "means for interfacing" in claim 5 simply requires connecting the host computer to the recorder by means of an interface. The function of the "interface means" in claims 14 and 23 is worded slightly differently, either "bi-directionally coupling a host computer to one of the data record/playback modules" (claim 14) or "reading and writing of information from and to the selected means for information storage received by the data recorder module" (claim 23). The parties treat these functions in a similar manner to claim 5.

Raytheon contends that the claimed function of the "interface means" is "to bi-directionally couple a host computer to one or more data record/playback modules." Defendants contend that the claimed function is "establishing a dedicated data channel through subsystem 42 reserved for read/write communications in both directions between the requesting host computer and the selected recorder loaded with the cassette." The Court agrees with Raytheon's construction and finds that "interface means" and "means for interfacing" perform the function of "bi-directionally coupling a host computer to one or more data record/playback modules ."

The next step is to identify the corresponding structure in the written specification for performing that function. *Id*. Raytheon generally identifies "(1) an interface computer; (2) a plurality of ports; (3) one or more crossbar switch modules; (4) a switch control module, and equivalents thereof" as corresponding structure while the Defendants point more specifically to "(1) interface computer 122, (2) switch subsystem 42, (3) host interface module 74, and (4) the interface components of the drive controller module 94, and equivalents thereof." The Court is persuaded that the structures linked to the interfacing function of claims 5, 14, and 23 include the structures of interface computer 122, switch subsystem 42, and host interface module

74.FN4

FN4. The Court has only identified corresponding structure, material, or acts described in the specification. Whether an accused device contains equivalent structure under s. 112, para. 6 is a question of fact for the jury This is the case in each instance where the Court identifies the corresponding structure of a means-plus-function claim.

The intrinsic evidence supports this construction. The Background of the Invention states that "[e]ach tape server interface computer is connected to a network to interface with one or more host computers," and "[e]ach tape server interface computer is, in turn, connected to the tape drives through a crossbar switch." '791 Patent, 2:18-23. The Summary of the Invention states, "The data channel which couples the interface computers to the data recorder modules comprises a plurality of crossbar switches...." '791 Patent, 4:14-16. The written description states that interface computer 122 is utilized to provide "the user with a direct interface to the mass storage drives," and that the outputs from interface computer 122 "are used to transfer data to the Switch Subsystem 42" '791 Patent, 9:67-10:1; 10 :65-66. It also states that switch subsystem 42 "provides any IFS tape server computer 14, 16, or 18 [interface computer] the ability to be connected to any drive subsystem 48 in drive unit 44 [data record/playback modules]," and that "the purpose of the switch subsystem 42 is to provide a logical and physical interface between interface subsystems 14, 16, 18, 21, and 19 (see FIG. 2) [interface computers] and the drive subsystems 48 and the drive unit 44 [data record/playback modules] ... " '791 Patent, 5:56-59; 7 :24-26; 13 :33-37. With respect to host interface module 74, the written description states,

[E]ach interface subsystem (IFS) [interface computer] is connected to a plurality of the host computers 12 through four well known types of external communication networks ... [e]ach of [which] is coupled to the IFS subsystems [interface computers] through a host interface module (HIM) 74. The host interface module 74 provides the connectivity between the IFS computers 14, 16, 18, 19 and 21 and the network."

'791 Patent, 6:33-43.

The Court declines Raytheon's invitation to adopt generic terms such as "an interface computer," "a plurality of ports," "one or more crossbar modules," and "a switch control module" to describe the corresponding structure when the patent itself sets forth the specific structures identified by the Court. This Court is not persuaded that structures specifically disclosed in the drawings of the specification such as interface computer 122 (shown in Fig. 3 of the '791 Patent) should be ignored in favor of Raytheon's construction. Thus, the Court rejects Raytheon's constructions because they do not adequately describe the actual structures disclosed for the claimed function. The Court's holding in this regard applies equally to many of Raytheon's proposed constructions of other terms.

While Raytheon's constructions do not adequately identify corresponding structure, the Defendants' constructions go too far. For example, the Defendants propose "*the interface components of* drive controller module 94," which overlooks whether drive controller module 94, as an overall structure, performs the claimed function, but instead looks within drive controller module 94 for sub-components that perform the claimed function. (emphasis added). The Court is not persuaded that a search for corresponding structure-within-corresponding structure is necessary The Federal Circuit has made clear that "[t]he individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations," and that "the claim limitation is the *overall* structure corresponding to the claimed function."

Odetics, Inc. v. Storage Tech Corp., 185 F.3d 1259, 1268 (Fed.Cir.1999) (emphasis added). The Federal Circuit added, "The appropriate degree of specificity is provided by the statute itself; the relevant structure is that which 'corresponds' to the claimed function, "and that "[f]urther deconstruction or parsing is incorrect." *Id*.

Usually, once a court is able to identify an overall structure that performs the claimed function, there is no need to delve deeper and identify the internal components of that structure that, individually or collectively, enable the overall structure to perform the claimed function. Delving into the 'nuts-and-bolts' of every corresponding structure goes beyond what the means-plus-function statute requires. A consequence of identifying a corresponding structure's sub-components is that jurors may get confused and 'lost in the details' in evaluating infringement. And if carried too far, an overzealous defendant may attempt to avoid liability for infringement by whittling a corresponding structure down to its smallest sub-components and then arguing that the sub-components or their equivalents are not present in the accused product. This would be a perverse application of the means-plus-function statute. Determining the degree of specificity necessary to identify corresponding structure is a task that courts must perform on a case-by-case basis. Depending on the nature of the patent at issue, identifying sub-components may sometimes be necessary; however, in this case, the Court believes that Defendants' identification of the "interface components of the drive controller module 94" goes beyond what is necessary to perform the claimed function.FN5

FN5. Although the Court rejects "the interface components of drive controller module 94" as corresponding structure, whether drive controller module 94, as a whole, is a corresponding structure is a different question. The Court finds that drive controller module 94 is not a corresponding structure for the interface means. The Summary of the Invention states that, "[a] data channel couples the interface computer. to the selected data recorder module [data record/playback module]," and that, "[t]he data channel which couples the interface computers to the data recorder modules comprises a plurality of crossbar switches [switch subsystem 42]."'791 Patent, 4:9-17 In other words, switch subsystem 42 couples the interface computer directly to the data record/playback modules. This suggests that drive controller module 94 is a component within the record/playback modules. The written description further bears this out: "The drive unit 44 has a multiplicity of drive subsystems 48, each of which comprises drive controller module 94(DCM) and a recorder module 96(RM) The main function of the drive subsystem 48(DRS) is to record data on and playback recorded digital data from cassettes in the MSL. DRS interfaces with the switch subsystem 42(SWS), ..." '791 Patent, 8:1-7 Thus, drive controller module 94 is a part of drive subsystem 48, the main function of which is to record and playback data. Because the claimed function is limited to coupling a host computer to one or more record/playback modules, it is unnecessary to list structures that reside inside the data/record playback modules.

Therefore, the Court finds that "interface means" and "means for interfacing" perform the function of bi-directionally coupling a host computer to one or more data record/playback modules Under s. 112, para. 6, these limitations cover the corresponding structure for performing the claimed function, which includes interface computer 122, switch subsystem 42, and host interface module 74.

2. "controller means" (Claim 5)

The parties agree that "controller means" is a means-plus-function limitation and agree on the claimed functions. They disagree regarding the corresponding structure. With respect to the claimed functions of the "controller means," the parties agree that they are: "(1) receiving operational function commands from the

computer, (2) configuring the means for interfacing for simultaneous read and write operations, (3) loading a selected storage medium in the recorder, and (4) queuing the loaded storage medium to the predetermined area."

With respect to the corresponding structure, Raytheon generally identifies "a control computer, and equivalents thereof" while the Defendants more specifically identify "control computer 40 and control channels 58, 60, 62, and 64, and equivalents thereof." Upon reviewing the specification, the Court finds the corresponding structure to be the overall structure of control computer 40. The intrinsic evidence supports this construction. Control computer 40 is shown in Figures 1 and 2A of the drawings The Summary of the Invention states,

A control computer is coupled to the directory computer and the mass storage library *for receiving the data location output signal from the directory computer* and in response thereto *generating a first signal* for *causing the storage element* in the mass storage library containing the requested information to be loaded into a selected data recorder. A control computer *generates an output signal that is coupled to the switch control module* for determining the routing signals coupling two predetermined ones of the ports of each crossbar switch together to couple any interface computer generating an access request signal to any selected data recorder. '791 Patent, 4:2-9; 4 :24-29. (emphases added).

Moreover, the written description states,

The control subsystem 40 *provides control for the allocation and de-allocation of common resources* for the mass storage library system. When an interface tape server 14, 16 or 18 or the interface disk server computer 19 receives a command to read or write data, it first requests resources from the control subsystem 40. Computer 40 will *initialize and position the appropriate resources* and informs the requesting IFS when the resources are available. Control of the recorder resources is then passed to the requesting IFS. Once the operation is complete, the controlling IFS informs control computer 40 that the operation is complete and the control computer 40 de-allocates those resources. '791 Patent, 6:1-13. (emphases added).

Raytheon's proposal of "a control computer," without any reference to detailed portions of the specification and the drawings, suffers the same infirmities as its "interface means" construction-it is simply too general to be of assistance to the jury. Specifically identifying control computer 40 as the corresponding structure is necessary to give sufficient clarity to the construction. However, the Court's construction should not be interpreted to imply that the Court is also holding that the sub-components of control computer 40 such as control processor 114, console processor 116, and media label printer 118 shown in Fig. 2A are, individually or collectively, also necessary to perform the claimed functions A jury need not and should not determine whether sub-components perform the claimed functions if, as the case here, the overall structure performs the claimed functions. That control computer 40, as an overall structure, performs the claimed functions is sufficient. There is no need to delve deeper by deconstructing or parsing control computer 40. The Court is not persuaded that the control channels are necessary to perform the claimed functions The specification states that control channels "58, 60, 62, and 64 are not necessarily independent." '791 Patent, 6:20-21.

The Court finds that "controller means" performs the functions of (1) receiving operational function commands from the computer, (2) configuring the means for interfacing for simultaneous read and write operations, (3) loading a selected storage medium in the recorder, and (4) queuing the loaded storage medium to the predetermined area. The corresponding structure for performing the claimed functions is

control computer 40.

3. "means for identifying" (Claim 12)

The parties agree that "means for identifying" is a means-plus-function limitation. They agree that the claimed functions of 'means for identifying" are: "(1) identifying a designated storage device in the library for access, and (2) identifying and selecting an area of the designated storage device on which data is to be read or written." They disagree, however, regarding the corresponding structure. With respect to the corresponding structure, Raytheon generally identifies "a file directory in association with an interface computer and equivalents thereof" while the Defendants specifically identify "(1) file directory module 78, and (2) interface computer 122, and equivalents thereof."

Raytheon argues that file directory module 78 is not a corresponding structure The Court disagrees File directory module 78 is necessary to perform the claimed functions because interface computer 122 cannot perform the act of "identifying" or "selecting" without file directory module 78, which stores the file directory information. *See* '791 Patent, 6:51-54 ("Each IFS unit 14, 16, 18, 19 and 21 has a file directory module (FDM) 78 which comprises at least one removable storage medium for maintaining a directory of the information contained on each data storage module"); '791 Patent, 11:16-17 ("The FDM 78 provides storage for the file system directories.").

The Court finds that "means for identifying" performs the functions of (1) identifying a designated storage device in the library for access, and (2) identifying and selecting an area of the designated storage device on which data is to be read or written. This limitation covers the corresponding structures for performing the claimed functions, which include file directory module 78 and interface computer 122.

4. "means for accessing" (Claim 12)

The parties agree that "means for accessing" is a means-plus-function limitation. They agree that the claimed function of "means for accessing" is "accessing the designated data storage device to read or write data in the selected area." They disagree, however, regarding the corresponding structure With respect to the corresponding structure, Raytheon identifies "an interface computer, a switch subsystem (i.e. a plurality of ports; one or more crossbar switch modules, and control logic), a control computer, a recorder coupled together, and equivalents thereof," while the Defendants identify "(1) interface computer 122, (2) switch subsystem 42, (3) control computer 40, (4) recorder module 96, (5) control channels 58, 60, and 64, (6) host interface module 74, and (7) the interface components of the drive controller module 94, and equivalents thereof."

The Court agrees with the Defendants' construction, except that the Court is not persuaded that control channels 58, 60, and 64, host interface module 74, and the interface components of the drive controller module 94 are necessary to perform the claimed function of accessing the designated data storage device to read or write data in the selected area. Therefore, the Court finds that the means for accessing in claim 12 covers the corresponding structures for performing the claimed function, which are the interface computer 122, switch subsystem 42, control computer 40, and recorder module 96.

5. "file directory means" (Claim 12)

The parties agree that "file directory means" is a means-plus-function limitation and that the claimed function is "storing file directory data." They disagree regarding the corresponding structure With respect to

the corresponding structure, Raytheon identifies a "second data storage medium, and equivalents thereof" while the Defendants identify "removable optical disks stored in file directory module 78, and equivalents thereof."

The specification makes clear that file directory data is stored in file directory module 78. *See* '791 Patent, 6:51-54 ("Each IFS unit 14, 16, 18, 19 and 21 has a file directory module (FDM) 78 which comprises at least one removable storage medium for maintaining a directory of the information contained on each data storage module."); 11-13-17 ("Each [interface computer] 122 has up to five file directory modules 78(FDM) each consisting of a juke box 146 for storing optical disks and two optical disk drives 148. The FDM 78 provides storage for the file system directories.") Performing the function of storing file directory data must necessarily include file directory module 78, which houses the file directory data. The Court, however, is not convinced that removability of the storage medium is a necessary quality for performing the claimed function. Also, whether another storage medium such as a disk drive is equivalent to optical disks is a question of fact for the jury Thus, the Court finds the corresponding structure to be optical disks stored in file directory module 78.

6. "buffer means" (Claim 23)

Each side agrees that "buffer means" is written in a means-plus-function format Because this limitation uses the word "means," it is presumed that s. 112, para. 6 applies. Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed.Cir.1997). Raytheon, however, contends that because "buffer" is well known in the art as a structure for the temporary store of data, the term should not be construed under s. 112, para. 6. To rebut the presumption that s. 112, para. 6 applies, Raytheon must demonstrate that claim 23 provides sufficient structure to "perform entirely" the recited function. *Id*. at 1427-1428. After reviewing the record, the Court disagrees with Raytheon and finds that "buffer means" is a means-plus-function limitation.

The parties agree that the claimed functions of the "buffer means" are "(1) storing information transmitted to the data recorder, and (2) storing information received from the data recorder" The Court agrees. With respect to corresponding structure, Raytheon contends that it is "a computer memory" while Defendants contend that it is "multi-access buffer unit 330" Again, Raytheon's construction is too general. Under Raytheon's construction, one of ordinary skill in the art would be unable to locate "computer memory" in the figures of the specification. Moreover, "computer memory" would be too easily confused with other forms of memory described in the specification such as cross bar memory, physical memory, system memory, and tape buffer memory '791 Patent, 10:53-60.FN6

FN6. The Defendants contend that Raytheon's "a computer memory" construction is inappropriate because a computer memory may or may not perform the function of buffering, and structures other than computer memories may perform the function of buffering. Defendants also argue that multi-access buffer unit 330 is not a "computer memory," however, the specification says the contrary-"The MAB unit 300 is a 500 Mbit circular memory using commercially available 1 Mbit dynamic RAMs." '791 Patent, 17:33-34.

The Defendants' proposed corresponding structure is multi-access buffer unit 330, which is a component within buffer component 320 (shown in Fig. 8 of the specification). The multi-access buffer unit 330 is clearly linked to the claimed functions by the specification, which states that it "provides the solid state memory necessary for temporary data storage as it is transferred between the individual IFS tape server and the RM 96." '791 Patent, 17:16-19. The Court is persuaded, however, that buffer component 320, the overall

structure, is also corresponding structure that performs the claimed functions *See* '791 Patent, 17:9-15 ("The buffer component 320 compensates for both effective and burst data transfer rate disparities between the IFS tape server 14, 16, 18, or 21 and the RM 96. The buffer component 320 also provides verification of data being written to the tape and comprises a multi-access buffer unit 330, a buffer control unit 332, and a read-after-write compare unit 334."). Therefore, the Court finds the corresponding structure to be either buffer component 320 or multi-access buffer unit 330.

7. "file directory data" (Claim 12)

Raytheon's construction is "data identifying files stored in the library" while the Defendants' construction is "data duplicated on removable optical disks at each interface computer 122 identifying all files stored in the library." The Court agrees with Raytheon's construction. The Defendants' construction is unnecessarily complex where simplicity will do Defendants' construction also improperly imports limitations from the specification such as "optical disks" and "interface computer 122" even though s. 112, para. 6 does not apply. Therefore, the Court construes "file directory data" to mean data identifying files stored in the library.

8. "data directory archive" (Claim 14)

Raytheon's construction is "data storage medium." The Defendants' construction is "removable storage medium replicated at each interface computer 122 that stores a list identifying all data stored in the mass storage data library." The Court construes "data directory archive" to mean data storage medium that stores a list identifying data stored in the mass storage data library

9. "data directory" (Claim 23)

Raytheon's construction is "a computer" The Defendants' construction is "a computer which uses the directory of the information to generate the data location output signal to the control computer." The Court construes "data directory" to mean a computer that maintains the directory of the information.

10. "directory of the information" (Claim 23)

Raytheon's construction is "a file or other data structure containing information about the identity of data." The Defendants' construction is "removable storage medium replicated at each interface computer 122 that stores a list identifying all data stored in the mass storage library" The Court construes "directory of the information" to mean storage medium that stores a list identifying data stored in the mass storage library.

11. "first signal" (Claim 14), "second signal" (Claim 14), "first command signal" (Claim 23), and "second command signal" (Claim 23)

The Court believes that only the term "signal" need be construed and that from that construction the jury will be able to determine the meaning of "first signal," "second signal," "first command signal," and "second command signal." The Court's construction is based on Raytheon's construction of "first signal." The Defendants' construction of "first signal" as being "signal sent by the controller computer to the mass storage library via a control channel independent from the data channel" is too complex and improperly imports limitations from the specification. The Court therefore construes "signal" to mean one detectable physical quantity or impulse (as a voltage, current, or magnetic field strength) by which messages or information can be transmitted.

12. "bi-directionally coupling" (Claim 14)

Raytheon's construction is "electrically connecting so that signals can flow in either direction." The Defendants' construction is "establishing a dedicated data channel reserved for the flow of data in both directions until the requested read/write operation is complete" The Court agrees with Raytheon's construction. The Defendants' construction improperly imports the concept of a 'dedicated data channel' into the claim term and also improperly imports the requirement that this data channel be reserved until a read or write operation is complete The Court construes "bi-directionally coupling" to mean electrically connecting so that signals can flow in either direction.

13. "bi-directionally coupled" (Claim 14)

Raytheon's construction is "electrically connected so that signals can flow in either direction." The Defendants' construction is "connected by a dedicated data channel reserved for the flow of data in both directions until the requested read/write operation is complete." The Court agrees with Raytheon's construction. The Defendants' construction improperly imports the concept of a 'dedicated data channel' into the claim term and also improperly imports the requirement that this data channel be reserved until a read or write operation is complete. The Court construes "bi-directionally coupled" to mean electrically connected so that signals can flow in either direction

14. "selected data record/playback module" (Claim 14)

Raytheon's construction is "a data/record playback module that has been chosen." The Defendants' construction is "data/record playback module chosen by the controller computer." The Court agrees with Raytheon that the Defendants' construction improperly imports a limitation regarding the method of selection, namely that the selection be performed by a control computer. The Court construes "selected data record/playback module" to mean a data/record playback module that has been chosen.

ORDERED and SIGNED.

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